REMARKS

This application has been carefully reviewed in light of the Office Action dated September 5, 2008. Claims 1 to 9 and 11 to 15 are pending in the application, with Claim 10 having been cancelled without prejudice or disclaimer of subject matter and with Claim 15 having been newly added therein. Claims 1, 12 and 15 are independent. Reconsideration and further examination are respectfully requested.

The title was objected to as not being descriptive. Applicant has submitted a new title. Accordingly, reconsideration and withdrawal of this rejection are respectfully requested.

Claims 1, 2 and 10 were rejected under 35 U.S.C. § 102(b) over U.S. Patent No. 6,320,191 (Rudd). Claims 3 and 4 were rejected under 35 U.S.C. § 103(a) over Rudd in view of U.S. Patent No. 5,729,017 (Brener). Claims 5 and 6 were rejected under 35 U.S.C. § 103(a) over Rudd in view of U.S. Patent No. 5,936,237 (van der Weide). Claims 7, 8 and 12 to 14 were rejected under 35 U.S.C. § 103(a) over Rudd in view of U.S. Patent No. 5,710,730 (Nuss). Claim 9 was rejected under 35 U.S.C. § 103(a) over Rudd in view of Nuss and further in view of U.S. Patent No. 5,952,818 (Zhang). Claim 11 was rejected under 35 U.S.C. § 103(a) over Rudd. Reconsideration and withdrawal of the rejections are respectfully requested.

Referring specifically to claim language, amended independent Claim 1 is directed to a sensing apparatus. The apparatus includes a transmission line for propagating an electromagnetic wave therethrough, and a detection unit for detecting propagation state of the electromagnetic wave at an arbitrary location on the transmission line. An interaction between an object disposed in the vicinity of the transmission line and the electromagnetic wave is detected. The transmission line has a resonance structure for confining the propagating electromagnetic

wave, and the resonance structure comprises a distributed reflective region having a periodic structure.

Amended independent Claim 12 is directed to a sensing apparatus. The apparatus includes a transmission line for propagating an electromagnetic wave therethrough, a detection unit for detecting propagation state of the electromagnetic wave through the transmission line, and a flow path disposed in the vicinity of the transmission line, for allowing an object to move therein. An interaction between the object and the electromagnetic wave is detected. The transmission line has a resonance structure for confining a propagating electromagnetic wave, and the resonance structure comprises a reflective region having a periodic structure.

The applied references, alone or in any permissible combination, are not seen to disclose or to suggest the features of Claims 1 and 12, and in particular, are not seen to disclose or to suggest at least the features of a transmission line for propagating an electromagnetic wave therethrough, wherein the transmission line has a resonance structure for confining the propagating electromagnetic wave, and the resonance structure comprises a distributed reflective region having a periodic structure (Claim 1), or a reflective region having a periodic structure (Claim 12).

As understood by Applicant, Rudd is directed to an electromagnetic radiation emitter which utilizes a precompensator, pulsed light signal, optical fiber cable, and a terahertz radiation generator. The precompensator is utilized to correct for the stretching of an optical signal as it travels through an optical fiber cable. (See Abstract of Rudd).

Page 3 of the Office Action asserts that Rudd (column 7, lines 5 to 6) teaches a transmission line for propagating an electromagnetic wave therethrough. In particular, the Office Action asserts that Rudd's dipole antenna 98 is composed of bias electrodes composed of thin

electrode lines and is the same as the transmission line of the present invention. Applicant respectfully disagrees.

In this regard, the dipole antenna 98 of Rudd is merely seen to serve as a radiation emitter. The dipole antenna has a photoconductive gap at its center in which carriers are generated. An ultrashort laser pulse in the femtosecond range will strike a focus spot located in a gap between dipoles of the dipole antenna, shorting the bias electrodes through the dipole antenna. The dipole antenna thereby radiates electromagnetic energy in the terahertz range. Suitable electrodes can be made of 0.5 micron thick gold linewidths from 1 micron to 100 microns separated by a gap of 5 to 100 microns, depending on what wavelength radiation is preferred. (See column 6, line 66 to column 7, line 11 of Rudd). In contrast to the dipole antenna of Rudd, the transmission line of the present invention has a resonance structure for confining the propagating electromagnetic wave, and the resonance structure comprises a distributed reflective region having a periodic structure (Claim 1), or a reflective region having a periodic structure (Claim 12).

The other applied references, namely Brener, van der Weide, Nuss, and Zhang have been reviewed, and are not seen to cure the above described deficiencies of Rudd.

Accordingly, independent Claims 1 and 12 are believed to be in condition for allowance, and such action is respectfully requested.

Newly-added independent Claim 15 is directed to a sensing apparatus. The sensing apparatus includes a substrate, a transmission line provided on the substrate for propagating an electromagnetic wave therethrough, and a detection unit for detecting propagation state of the electromagnetic wave at an arbitrary location on the transmission line. An interaction between an object disposed on the transmission line and the electromagnetic wave is detected.

The applied references, alone or in any permissible combination, are not seen to disclose or to suggest the features of Claims 15, and in particular, are not seen to disclose or to suggest at least the features of a transmission line provided on a substrate for propagating an electromagnetic wave therethrough, wherein an interaction between an object disposed on the transmission line and the electromagnetic wave is detected.

In this regard, Rudd is merely seen to disclose an electromagnetic radiation receiver configured to detect electromagnetic radiation in the terahertz range, after being conditioned by a sample. The receiver can be placed at any position surrounding a sample, so as to detect absorbed, reflected, refracted, or scattered radiation. (See column 7, lines 18 to 24 of Rudd). However, Rudd is not seen to disclose a transmission line provided on a substrate for propagating an electromagnetic wave therethrough, wherein an interaction between an object disposed on the transmission line and the electromagnetic wave is detected.

The other applied references, namely Brener, van der Weide, Nuss, and Zhang have been reviewed, and are not seen to cure the above described deficiencies of Rudd.

Accordingly, independent Claim 15 is believed to be in condition for allowance, and such action is respectfully requested.

The other claims in the application are each dependent from the independent claims discussed above and are therefore believed to be allowable over the applied references for at least the same reasons. Because each dependent claim is deemed to define an additional aspect of the invention, however, the individual consideration of each on its own merits is respectfully requested.

No other matters being raised, the entire application is believed to be in condition for allowance, and such action is courteously solicited.

CONCLUSION

No claim fees are believed to be due. However, should it be determined that additional fees are required under 37 C.F.R. 1.16 or 1.17, the Director is hereby authorized to charge such fees to Deposit Account 50-3939.

Applicant's undersigned attorney may be reached in our Costa Mesa, CA office at (714) 540-8700. All correspondence should continue to be directed to our below-listed address.

Respectfully submitted,

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